

The AMC RDEC Federation

Collaborative Development & Integration Environment



Don Gulliksen
(973) 724-9000

19 June 2002
Transforming Fires in the 21st Century



But first, a brief quiz...

- ☒ Will the Army's future forces be *distributed*?
- ☒ Will they be interconnected by a *real time* network?
- ☒ Will there be a need to operate in a *collaborative* environment?
- ☒ Will the Army's future technologies be a *heterogeneous* mixture?
- ☒ Will technologies need to be *integrated* during development?
- ☒ Will there be heavy reliance on *modeling and simulation*?

extra credit question

☐ ? Does the Army have experience with?

? *Distributed*

? *Real time*

? *Collaborative*

? *Heterogeneous*

? *Integrated*

? *Modeling and Simulation*

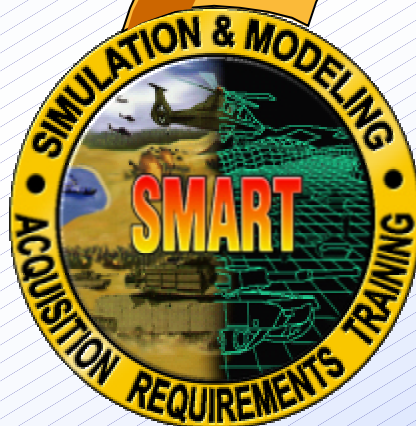


RDEC Federation: *Lineage*



SBA Vision

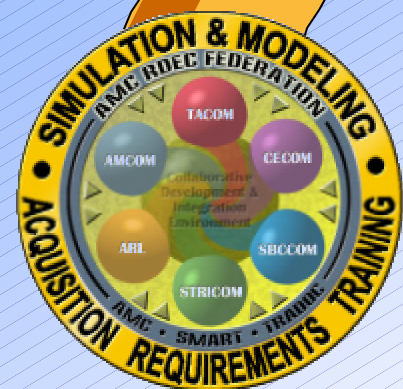
"an acquisition process in which DoD and Industry are enabled by robust, collaborative use of simulation technology that is integrated across acquisition phases and programs."



The Army's vision for SMART is a process by which we capitalize on Modeling and Simulation (M&S) technology to address the issue of system development and life-cycle costs through the combined efforts of the requirements, training, and acquisition communities.



RDEC Federation: *Vision*



- *To develop a **persistent** AMC-wide **distributed** modeling and simulation environment* that will permit the overall research, development and acquisition community to have wide access, linkage, and integrated use of a diverse set of models and simulators available at each of the federation partner laboratories/facilities.
- *To provide a capability for representing and evaluating, through distributed modeling and simulation, a **wide range of technologies**, military systems, mission equipment, and battle space capabilities.*
- *To provide a capability for addressing issues from both an individual platform and **system-of-systems** perspective* for the optimal development, integration, and evolution of information, communication, mission equipment, weapon systems, and platform technologies.



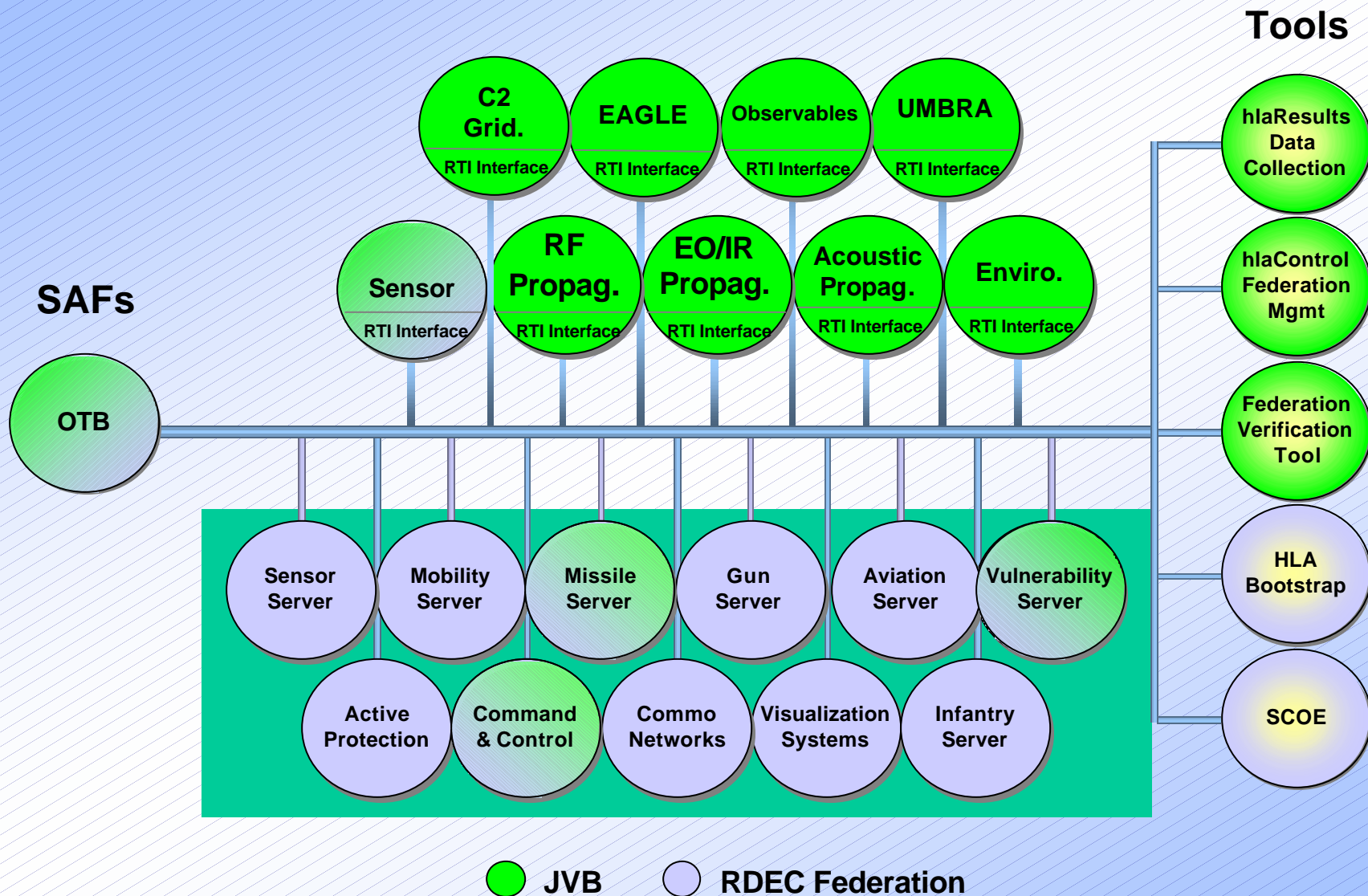
*RDEC Federation: **Members***

- **TARDEC** (Warren, MI)
- **ARDEC** (Picatinny Arsenal, NJ)
- **CERDEC - NVESD** (Ft. Belvoir, VA)
- **CERDEC - I2WD** (Ft. Monmouth, NJ)
- **AMRDEC** (Redstone Arsenal, AL)
- **STRICOM** (Orlando, FL)
- **ARL** (Aberdeen Proving Ground, MD)
- **SBCCOM** (Natick, MA)
- **SBCCOM** (Edgewood, MD)



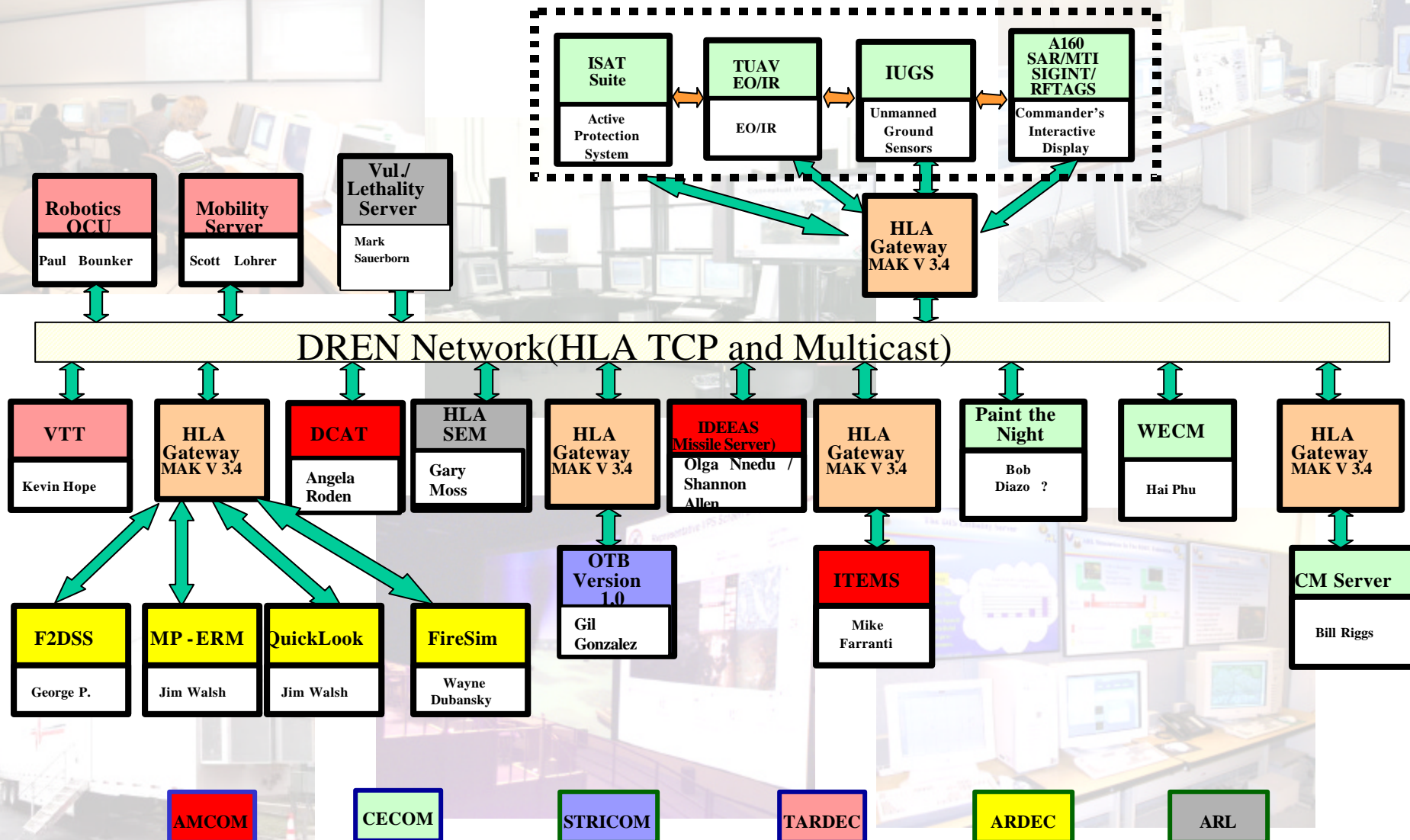


RDEC Federation: *Partners*





RDEC Federation: *Network*





OFSS – RDEC Federation excursions using distributed federation standalone from JVB

Proven continuously functional and usable through weekly integration events



RDEC Federation: Goals

- Scenarios are drag and drop on a web site
- Models plug and play over a distributed network
- Models are interchangeable with physical entity
 - model interfaces same as physical entity interfaces
 - when physical entity is a network component – don't model
 - when physical entity is software – don't model
- Scenarios run at variable speeds
 - at model speed for high resolution
 - at real time for man-in-the-loop simulations
 - at high speed for statistical analysis
- Same model used in all domains
 - ACR: Advanced Concepts Requirements
 - RDA: Research, Development, Acquisition
 - TEMO: Test, Evaluation, Military Operations

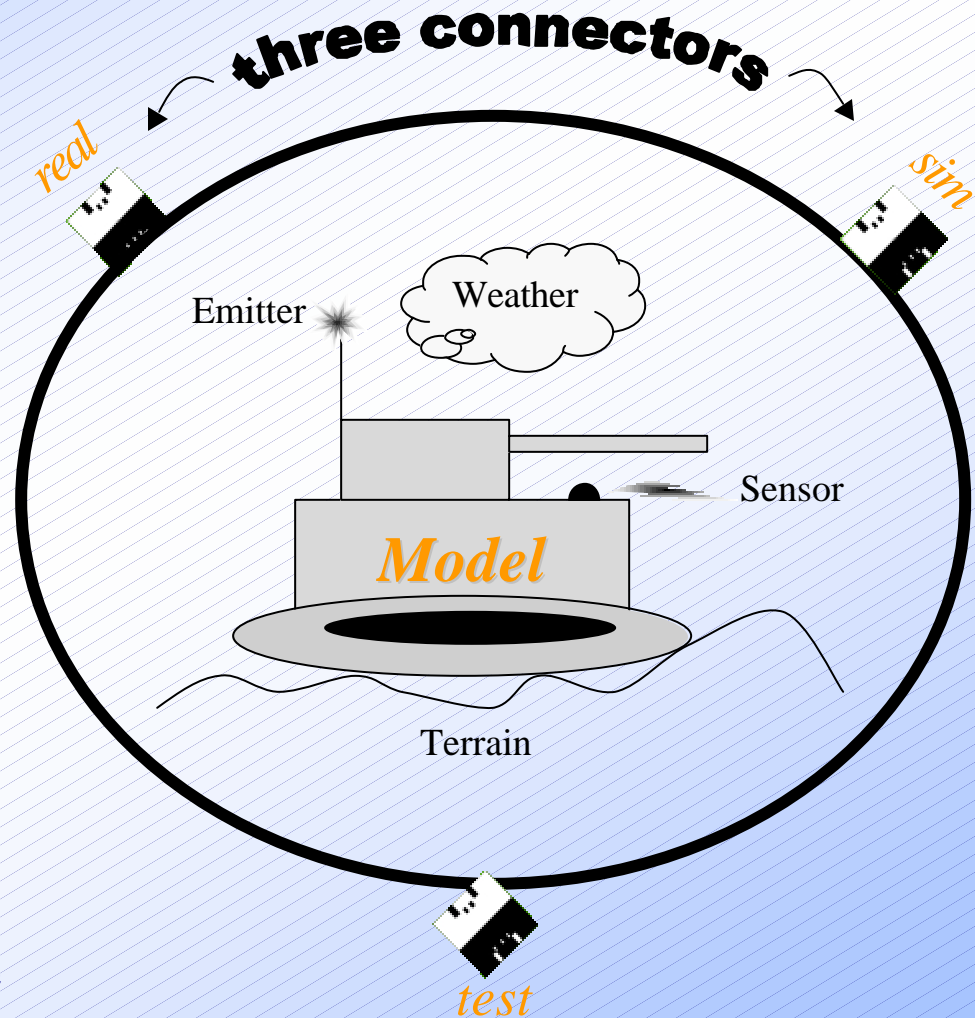


Subject Matter Expert for physical entity also certifies its model!



RDEC Federation: *Guiding Principles*

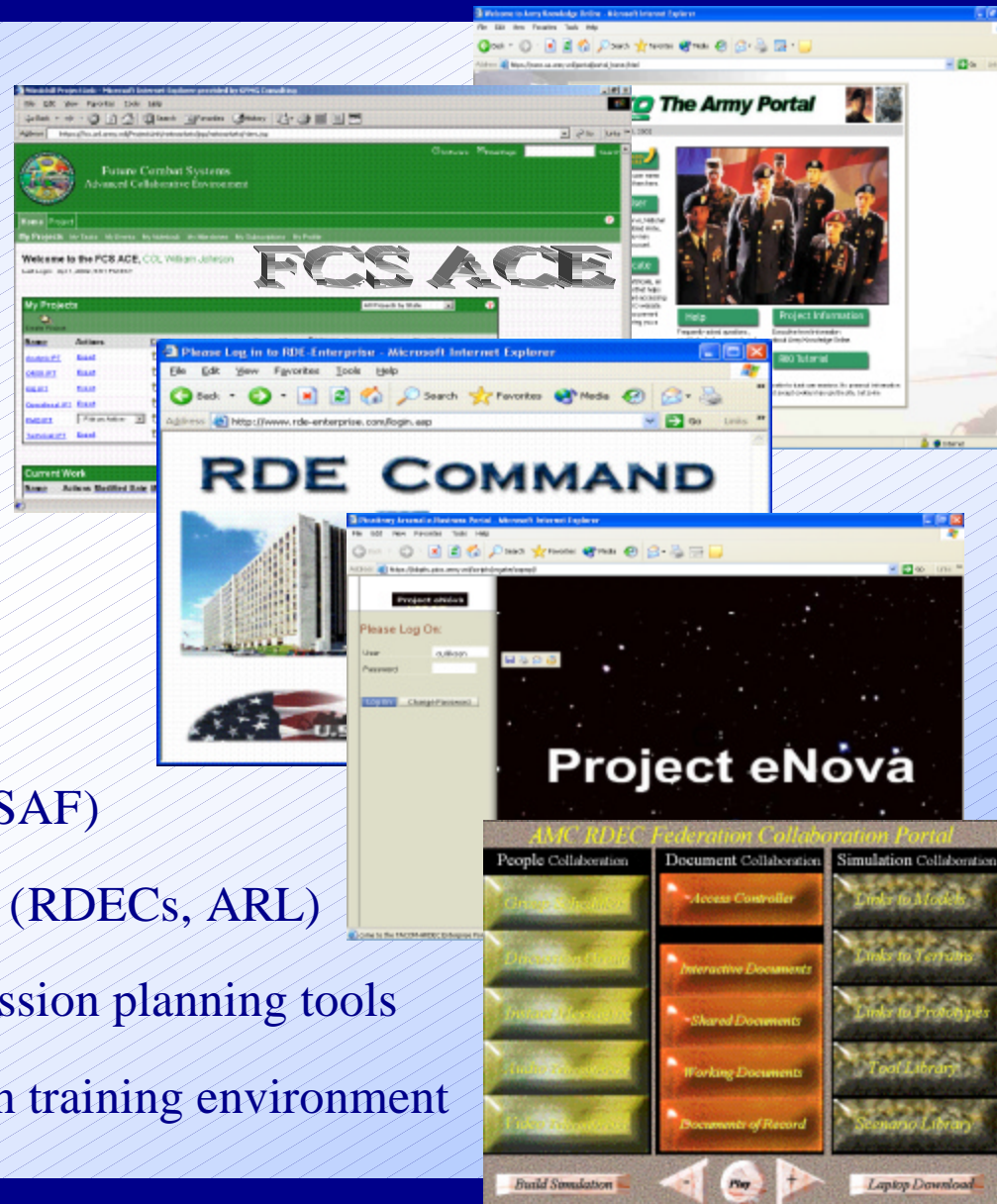
- **Principle #1:** models 'plug in' the same way as the real thing
- **Principle #2:** All entities are modeled the same way
- **Principle #3:** All servers are common resources
- **Principle #4:** Don't model software systems – just use them
- **Principle #5:** Scenarios are scripted via drag-and-drop interface





*There's **more to it** than M&S...*

- Collaboration among people
- Product Data Management
 - Tools (OTB, RTI, HLA Gateway, etc.)
 - Models (Missiles, Armaments, etc.)
 - Terrains (Bosnia, Afghanistan, etc.)
 - Scenarios (Fomblor's Ford, etc.)
- Distributed prototype engineering
- Drag and Drop Scenario builder (OneSAF)
- Drag and Drop certified model library (RDECs, ARL)
- Synchronization with laptop-based mission planning tools
- Reuse of development environments in training environment



AMC RDEC Federation Collaboration Portal

People Collaboration

Group Scheduler

Discussion Group

Instant Messaging

Audio Teleconference

Video Teleconference

Document Collaboration

- Access Controller

Interactive Documents

- Shared Documents

Working Documents

Documents of Record

Simulation Collaboration

Links to Models

Links to Terrains

Links to Prototypes

Tool Library

Scenario Library

Build Simulation



Laptop Download



RDEC Federation: *Recognition*

Annual Defense M&S Award

- Excellence, innovation, achievement
- Enhancing M&S awareness
- Advancing M&S state-of-the-art
- Contributing to interoperability
- Developing architectures
- Developing standards

Endorsements

- DUSA-OR (Walt Hollis)
- AMSO (Dell Lunceford)
- FCS (Kent Pickett)
- TRAC (Mike Bauman)
- ASAALT (Dr. Larry Stotts)

Defense Modeling and Simulation Office - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Mail Print Mail News RSS

Address https://www.dmsomil/public/pao/stories/y_2002/m_06/02-6-5-1 Go Links

DMSO United States Department of Defense
Defense Modeling and Simulation Office

MON, 17 JUN 2002 SEARCH SITE MAP CONTACT US PRIVACY & SECURITY NOTICE

HOME : Public : Public Affairs : Article Library : 2002 : June

DoD M&S MANAGEMENT

WHAT'S NEW

- Announcements
- M&S Calendar
- M&S News e-Clips
- DMSO News Online

WARFIGHTER AREAS

- Asymmetric Warfare
- Joint Programs
- Transformation

TECHNOLOGY THRUSTS

- C4I to Sim
- Dynamic Environment
- Human Performance
- Knowledge Integration

TECH TRANSITION

- FDMS
- HLA / RTI
- MEL / ESG
- SEDRIS
- VV&A

RESOURCES

- MSIAAC
- MSRR
- Online M&S Glossary
- DoD M&S Links
- Mailing Lists
- Document Library

COMMUNITY

- M&S University
- M&S Awards
- Executive Forum

Four Winners Selected For Annual Defense Modeling And Simulation Awards

WASHINGTON, DC -- Four winners have been selected for the fourth annual Department of Defense (DoD)-sponsored Modeling and Simulation (M&S) Awards. The awards were to be presented this month during the 11th annual Executive Forum on M&S, however, with the postponement of the forum (visit https://www.dmsomil/public/pao/stories/y_2002/m_04/7-1-2 for details), alternative arrangements are under way to present them.

Sixty-five nominations were received during the two-month nomination period that ended Dec. 15.

The awards recognize achievement during the year 2001 in support of DoD M&S objectives. Winners were selected in each of four categories. The first three categories consist of the M&S functional areas -- training, analysis and acquisition. The fourth category, a cross-functional area, considers those broader endeavors that impact all aspects of the overall DoD M&S effort.

All units, organizational elements and individuals -- both civilian employees and active duty service members -- of the DoD Components that are involved with the development and/or use of M&S are eligible.

WINNERS

Winners by functional area are:

- **ACQUISITION FUNCTIONAL AREA**
 - The U.S. Army Materiel Command's (AMC) M&S Research Development and Engineering Center (RDEC) Federation in Alexandria, Va.
 - The RDEC Federation is a distributed network of Research Development and Engineering Centers (RDECs) that are Research, Development, Simulation, Training and Education Command

Done Internet



Can you answer the *extra credit* question?

- ☒ Will the Army's future forces be *distributed*?
- ☒ Will they be interconnected by a *real time* network?
- ☒ Will there be a need to operate in a *collaborative* environment?
- ☒ Will the Army's future technologies be a *heterogeneous* mixture?
- ☒ Will technologies need to be *integrated* during development?
- ☒ Will there be heavy reliance on *modeling and simulation*?

extra credit question

- ☒ Does the Army have experience with?

? *Distributed*

? *Real time*

? *Collaborative*

? *Heterogeneous*

? *Integrated*

? *Modeling and Simulation*